

# Nanomaterials for treatment of neurodegenerative disorders

<https://neurodegenerationresearch.eu/survey/nanomaterials-for-treatment-of-neurodegenerative-disorders/>

**Name of Fellow**

**Institution**

**Funder**

European Commission FP7-Seventh Framework Programme

**Contact information of fellow**

**Country**

EC

**Title of project/programme**

Nanomaterials for treatment of neurodegenerative disorders

**Source of funding information**

European Commission FP7-Seventh Framework Programme

**Total sum awarded (Euro)**

€ 299,558

**Start date of award**

01/04/14

**Total duration of award in years**

2.0

**The project/programme is most relevant to:**

Neurodegenerative disease in general

**Keywords**

Neuroprotection | nanoscience | nanoparticles | neurodegeneration | brain injury | Parkinson's | peptide mimetics | S100 | neuron | cell signalling

**Research Abstract**

Development of new strategies to treat neurodegenerative diseases is one of the key priorities of the European Union. Their socioeconomic burden is rapidly growing due to the increasing lifespan and the decreasing percentage of working population, currently costing the EU €130

billion a year in care.

Despite efforts put in development of treatments for neurodegeneration, the bench-to-bedside translation of neuroprotective strategies remains very low. Major factors contributing to this problem are incomplete understanding of the mechanisms behind neuronal injuries, lack of compounds affecting multiple protective pathways/cell types, and side effects caused by broad-spectrum neuroprotectants. A separate crucial problem is the limited blood–brain barrier (BBB) passage of most compounds. Therefore, identification of effective therapeutic targets in the brain and delivery of novel low-cost neuroprotectants with minimal side effects and high BBB passage is of paramount importance.

The emergence of nanoneuroscience is revolutionizing treatment of CNS disorders. This approach uses nanometer-scale materials, which can interact with biological systems at a molecular level, bypass cellular barriers and induce desired physiological responses in cells with minimal side effects. The project proposed here combines advanced methods of nanoscience and neurobiology to (1) characterize novel therapeutic targets and neuroprotective pathways in the brain and (2) design novel efficient nanoprotectants against neurodegenerative conditions, such as stroke, epilepsy, Parkinson's and Alzheimer's diseases.

The project will offer exemplary training for the Fellow in nanoneuroscience, as well as in project management skills, at Imperial College, ranked the 5th highest university internationally. These competencies will complement the already impressive range of the Fellow's research and managing capabilities and will help her to develop as a leader in this frontier area of science.

**Types:**

Fellowships

**Member States:**

N/A

**Diseases:**

Neurodegenerative disease in general

**Years:**

2016

**Database Categories:**

N/A

**Database Tags:**

N/A